

μA703C RF-IF AMPLIFIER

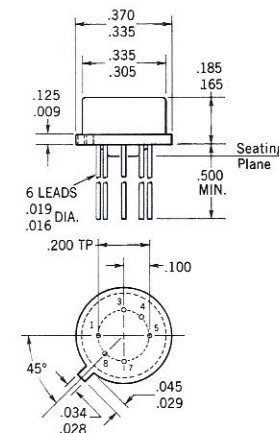
FAIRCHILD LINEAR INTEGRATED CIRCUITS

GENERAL DESCRIPTION - The μA703C is an RF-IF amplifier constructed on a single silicon chip and is intended for use as a limiting or non-limiting amplifier, harmonic mixer, or oscillator to 150 MHz. The low internal feedback of the device insures a higher stability-limited gain than that available from conventional circuitry. Including the biasing network in the same package reduces the number of external components required, thereby increasing the reliability and versatility of the device. For full range operation (-55°C to +125°C) see μA703 data sheet.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	20 V
Output Collector Voltage	24 V
Voltage Between Input Terminals	± 5.0 V
Internal Power Dissipation (Note 1)	200 mW
Operating Temperature Range	0°C to +70°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering - 60 second)	300°C

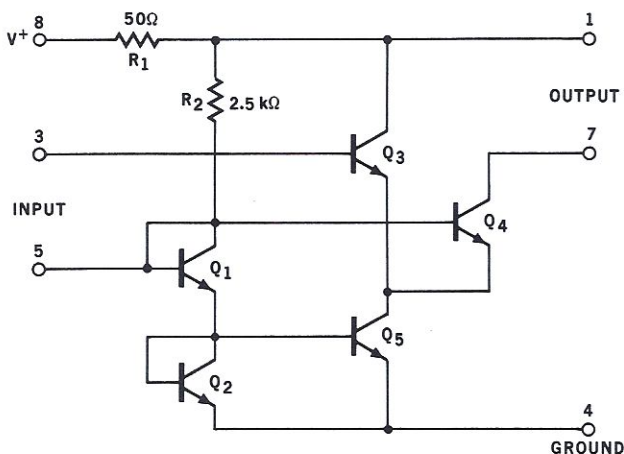
PHYSICAL DIMENSIONS



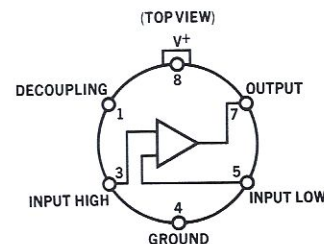
NOTES: All dimensions in inches
Dimensions as per latest J-10 committee
Weight is 1.27 grams

ORDER PART NO. U5D770339X

SCHEMATIC DIAGRAM



CONNECTION DIAGRAM



NOTE: Pin 4 connected to case.

NOTE 1: Rating applies for ambient temperatures to 70°C.

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FAIRCHILD
SEMICONDUCTOR
A DIVISION OF FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

FAIRCHILD LINEAR INTEGRATED CIRCUITS $\mu A703C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V^+ = 12\text{ V}$ unless otherwise specified)

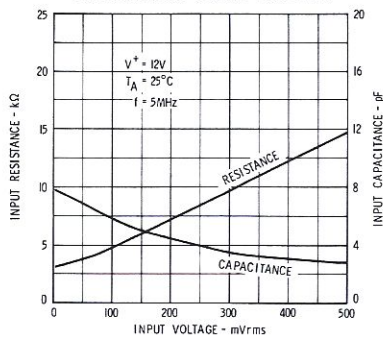
Parameter	Conditions	Min.	Typ.	Max.	Units
Power Consumption	$e_{in} = 0$		110	170	mW
Quiescent Output Current	$e_{in} = 0$	1.9	2.5	3.3	mA
Peak-to-Peak Output Current	$e_{in} = 400\text{ mV rms}, f = 1\text{ kHz}$	3.6			mA
Output Saturation Voltage				1.7	V
Forward Transadmittance	$e_{in} = 10\text{ mV rms}, f \leq 5\text{ MHz}$	23	33		mmho
Input Conductance	$e_{in} < 10\text{ mV rms}, f \leq 5\text{ MHz}$		0.35	0.50	mmho
Input Capacitance	$e_{in} < 10\text{ mV rms}, f \leq 5\text{ MHz}$		9.0	11.0	pF
Output Capacitance	$f \leq 5\text{ MHz}$		2.0	3.0	pF
Output Conductance	$f \leq 5\text{ MHz}$			0.05	mmho
Noise Figure	$f = 30\text{ MHz}, R_s = 500\ \Omega$		6.5		dB
	$f = 100\text{ MHz}, R_s = 500\ \Omega$		8.0		dB

The following specifications apply for $0^\circ\text{C} \leq T_A \leq 70^\circ\text{C}$:

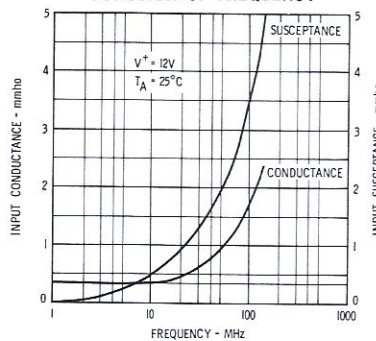
Quiescent Output Current	$e_{in} = 0$	1.7		3.5	mA
Peak-to-Peak Output Current	$e_{in} = 400\text{ mV rms}, f = 1\text{ kHz}$	3.2			mA
Output Saturation Voltage				1.8	V
Forward Transadmittance	$e_{in} = 10\text{ mV rms}, f \leq 5\text{ MHz}$	22			mmho
Input Conductance	$e_{in} < 10\text{ mV rms}, f \leq 5\text{ MHz}$			0.71	mmho
Output Conductance	$f \leq 5\text{ MHz}$			0.06	mmho

TYPICAL PERFORMANCE CURVES

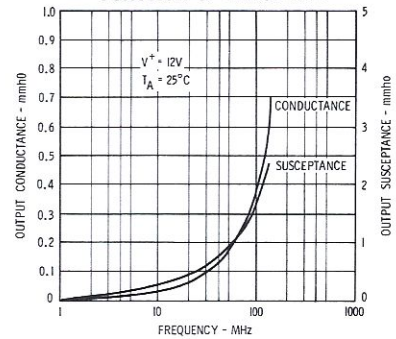
INPUT RESISTANCE AND CAPACITANCE AS A FUNCTION OF INPUT VOLTAGE



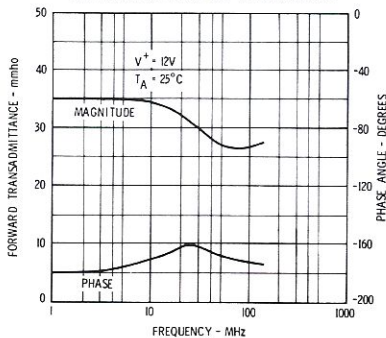
INPUT ADMITTANCE AS A FUNCTION OF FREQUENCY



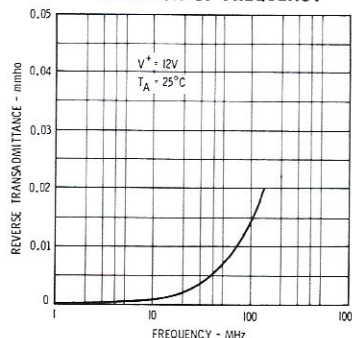
OUTPUT ADMITTANCE AS A FUNCTION OF FREQUENCY



FORWARD TRANSADMITTANCE AS A FUNCTION OF FREQUENCY



MAXIMUM REVERSE TRANSADMITTANCE AS A FUNCTION OF FREQUENCY



OUTPUT CURRENT AS A FUNCTION OF INPUT VOLTAGE

